

Linksys SPA400



Trixbox Integration Guide



Access Point – Connecting You & Your Customers.

Contact : support@voipshop.com.au

Overview:

The Linksys SPA400 is a 4 Line FXO gateway capable of connecting 4 PSTN lines to your asterisk system to make and receive calls. This guide is a step by step on how to configure Trixbox to utilize the features of the SPA400. Limitations:

- * The voicemail function of the SPA400 cannot be used.
- * You cannot select which line of the SPA400 to use. They are treated as a single group of 1-4 lines. The SPA400 will know which lines are available by the line voltage when plugged in.

Configure the SPA400:

Step 1 – Obtain the IP address if the SPA400

Option 1(Easiest): You will need to check your DHCP server to see what IP address has been allocated to the SPA400 (Will usually be in the Status area of your Modem/Router).

Option 2(Harder): If you only have a few devices on your network you can use angry IP scanner (<http://www.angryziber.com>) which will search your network for devices. You should be able to work out the SPA400 address. Try searching for port 5060 also to help identify.

Option 3: You can download the SPA9000 setup utility from <http://www.linksys.com> it will scan the network for SPA400s and show the IP address.

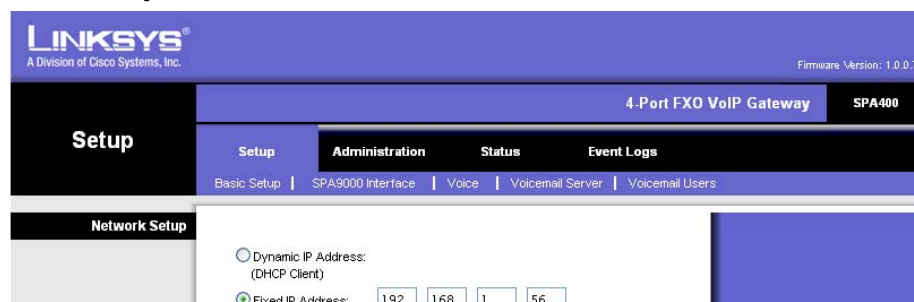
Note the IP Address: _____

Step 2 – Access the SPA400

In your favourite web browser type the IP address of the SPA400, it should ask for a username and password.

The **default username** is Admin (Note capital A)

The **default password** is *blank*



Step 3 – Set the SPA400 to a Fixed IP address

Asterisk needs to access your SPA400, so it needs to be set to a fixed ip address. To do this: -

Under Setup -> Basic Setup

- Select Fixed IP address and enter a valid fixed IP address for your network.
- Be sure to enter a DNS server, if you do not know enter the Telstra DNS server 139.130.4.5 – You can leave the secondary blank
- Set your time zone.
- Click Save Settings
- Restart System

The screenshot shows the SPA400 web interface with the following configuration details:

- Setup** (Main menu)
- Setup** (Sub-menu)
- Administration** (Sub-menu)
- Status** (Sub-menu)
- Event Logs** (Sub-menu)
- Basic Setup** (Selected sub-menu)
- SPA9000 Interface** (Selected interface)
- Dynamic IP Address: (DHCP Client)** (Unselected)
- Fixed IP Address:** 192 . 168 . 1 . 56 (Selected)
- IP Subnet Mask:** 255 . 255 . 255 . 0
- Gateway IP Address:** 192 . 168 . 1 . 1
- Domain Name Server (DNS) Address**
- Primary DNS:** 139 . 130 . 4 . 5
- Secondary DNS:** [] . [] . [] . []
- NTP**
- NTP Server 1:** time.nist.gov
- Time Zone:** (GMT+10:00) Australia
- Save Settings** (Button)
- Cancel Changes** (Button)

Sample Config – Use Address Valid For Your Network
Check with the network administrator if unsure.

Note the IP address in the Notes Section.

Step 4 – Setup the SPA400 Voice Configuration.

Open the SPA400 in your web browser using the new IP address.

Select Setup->SPA9000 Interface.

- Enter SPA400 in the User ID:
- Leave SPA9000 on discover automatically
- No other changes should need to be made
- Click Save Settings (You Do Not Need To Restart)

The screenshot displays the configuration interface for a SPA9000 interface. The page is divided into several sections, each with a corresponding label on the left side of a vertical menu:

- SPA9000 User ID:** User ID: SPA400
- SPA9000 Address:** Discover Automatically, Static Address. IP Address: 192.168.0.70, Port: 5060
- Port ID:** Port ID 1: FXO_Port_ID_1, Port ID 2: FXO_Port_ID_2, Port ID 3: FXO_Port_ID_3, Port ID 4: FXO_Port_ID_4
- Signaling:** Signaling Port: 5060
- RTP:** RTP Port: 10000
- IP ToS/DiffServ:** Call Signaling Packets: 7 (2 Hex digit byte value), RTP Packets: b0 (2 Hex digit byte value)
- Session:** Enable Session Timer, Desired Refresh Time: 0 (sec), Minimum Refresh Time: 0 (sec)

At the bottom right of the page, there are two buttons: "Save Settings" and "Cancel Changes".

Screenshot of Setup -> SPA9000 Interface

Select Setup -> Voice

For Australia you need to change: -

- Impedance : 220 Ohms + (820 Ohms || 120nF)
- On-Hook speed : 26ms

Setup

Setup Administration Status Event Logs

Basic Setup SPA9000 Interface Voice Voicemail Server Voicemail Us

Voice Coders

Preferred Coder G.711U G.711A G.729

Voice Coders

	Packetization	VAD
G.711U	20ms	OFF
G.711A	20ms	OFF
G.729	30ms	OFF

Voice Setting

Calling Timers

Wait-for-Answer time : 180 sec

Call Limit : 65535 sec

Dialing Parameters

Tone out on: 200 msec

Tone out off: 200 msec

DTMF power: -130 (-400 ~ 30) * 0.1 dB

Answer after : 1 rings

Dial out wait : 400 msec

Dial out battery threshold : 20 volts

Line Settings

Transmit Gain: 0 dB

Receive Gain: 0 dB

Impedance: 220 Ohms + (820 Ohms || 120 nF)

Tip/Ring voltage: 3.5 (default)

Operational loop current Min: 10mA (default)

On-Hook speed: 26ms (Australia)

Ring frequency Min: 10

Ring frequency Max: 100

Ring Validation Time: 256 (default)

Ring Indication Delay: 512 (default) ms

Ring Timeout (ms): 640 (default)

Ring Threshold (vrms): 13.5 - 16.5 (default)

Ringer Impedance: High (default)

DC current Limiting: Enable (default)

Caller Id Method: UK

Battery reversal as disconnect signal

Loop period shut-down as disconnect signal

Step 5 – Configure Trixbox Trunk.

Open your FreePBX interface: <http://trixbox.ip/admin/>

Select Trunks -> Add SIP trunk

Complete the form with the details below:

Outbound Caller ID: Blank

Never Override CallerID : Unticked

Maximum Channels: (the number of pstn lines plugged into the SPA400)

Dial Rules: Leave Empty

Outbound Dial Prefix: Empty

Trunk Name: SPA400 (Can be anything you wish)

Peer Details:

```
allow=ulaw
canreinvite=no
context=from-trunk
dtmfmode=rfc2833
host=x.x.x.x
insecure=very
type=friend
user=SPA400
```

USER Context: Leave Blank

USER Details: Blank (Delete the default information)

Register String:

SPA400@x.x.x.x/SPA400

Note : **x.x.x.x** should be where you enter the IP address of the SPA400

Click Submit Changes.

Step 6 – Configure Outbound Route.

You can now treat the SPA400 like any other trunk. To add an outbound router (eg, dial 9 to dial out the SPA400)

Outbound Routes -> Add Route

Route Name: SPA400PSTN (*this can be anything*)

Route Password: Blank

Emergency Dialing: Unticked

Intra Company Route: Unticked

Dial Patterns: 9|.

Trunk Sequence: SPA400

Click Submit Changes

Step 7 – Configure Inbound Route.

This will setup an inbound route for people who call the PSTN lines plugged into the SPA400.

Setup -> Inbound Routes -> Add Incoming Route

DID Number: SPA400 (*case sensitive*)

Caller ID Number: Blank

Zaptel Channel: Blank

Fax Handling

Leave as is

Select the Destination

Click Submit

Click the Red "Apply Configuration Changes" to reload asterisk

Complete:

You should now be able to make and receive calls via your SPA400.

Email support@voipshop.com.au for further support if required.

Congratulations

Notes:

SPA400 IP Address: _____

SPA400 Username: _____

SPA400 Password: _____

Number of Lines: _____

Installed By: _____

Date: _____

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